



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

DN A01098A

In re application of  
Pankaj Vinubhai Shah.

Paper No.: 11

Serial No. 09/927,009

Group Art Unit: 1733

Filed: August 9, 2001

Examiner: J.L. Goff II

For: METHOD FOR FORMING A HOT MELT ADHESIVE

Commissioner for Patents  
Alexandria, VA 22313-1450

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# FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

 Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 330.00)

## Complete if Known

Application Number	09/927,009
Filing Date	August 9, 2001
First Named Inventor	Shah
Examiner Name	J.L. Goff II
Art Unit	1733
Attorney Docket No.	A01098A

## METHOD OF PAYMENT (check all that apply)

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Deposit Account Name  
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## FEE CALCULATION

## 1. BASIC FILING FEE

Large Entity	Small Entity	Fee Description	Fee Paid
Fee Code (\$)	Fee Code (\$)		
1001 770	2001 385	Utility filing fee	
1002 340	2002 170	Design filing fee	
1003 530	2003 265	Plant filing fee	
1004 770	2004 385	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	
SUBTOTAL (1) (\$)			

## 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims	-20** =	X	=	Fee Paid
Independent Claims	- 3** =	X	=	
Multiple Dependent				

Large Entity	Small Entity	Fee Description
Fee Code (\$)	Fee Code (\$)	
1202 18	2202 9	Claims in excess of 20
1201 86	2201 43	Independent claims in excess of 3
1203 290	2203 145	Multiple dependent claim, if not paid
1204 86	2204 43	** Reissue independent claims over original patent
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent
SUBTOTAL (2) (\$)		

\*\*or number previously paid, if greater; For Reissues, see above

## 3. ADDITIONAL FEES

Large Entity Small Entity

Fee Code (\$)	Fee Code (\$)	Fee Description	Fee Paid
1051 130	2051 65	Surcharge - late filing fee or oath	
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130	Non-English specification	
1812 2,520	1812 2,520	For filing a request for ex parte reexamination	
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action	
1251 110	2251 55	Extension for reply within first month	
1252 420	2252 210	Extension for reply within second month	
1253 950	2253 475	Extension for reply within third month	
1254 1,480	2254 740	Extension for reply within fourth month	
1255 2,010	2255 1,005	Extension for reply within fifth month	
1401 330	2401 165	Notice of Appeal	
1402 330	2402 165	Filing a brief in support of an appeal	330.00
1403 290	2403 145	Request for oral hearing	
1451 1,510	1451 1,510	Petition to institute a public use proceeding	
1452 110	2452 55	Petition to revive - unavoidable	
1453 1,330	2453 665	Petition to revive - unintentional	
1501 1,330	2501 665	Utility issue fee (or reissue)	
1502 480	2502 240	Design issue fee	
1503 640	2503 320	Plant issue fee	
1460 130	1460 130	Petitions to the Commissioner	
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)	
1806 180	1806 180	Submission of Information Disclosure Stmt	
8021 40	8021 40	Recording each patent assignment per property (times number of properties)	
1809 770	2809 385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810 770	2810 385	For each additional invention to be examined (37 CFR 1.129(b))	
1801 770	2801 385	Request for Continued Examination (RCE)	
1802 900	1802 900	Request for expedited examination of a design application	
Other fee (specify) _____			
*Reduced by Basic Filing Fee Paid		SUBTOTAL (3) (\$ 330.00)	

(Complete if applicable)

Name (Print/Type)	RONALD D. BAKULE	Registration No. (Attorney/Agent)	32,681	Telephone	215-641-7822
Signature				Date	April 2, 2004

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Image  
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GROUP ART UNIT: 1733

APPEAL NO.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

APPELLANT'S BRIEF

Pankaj Vinubhai Shah

Application for Patent Filed August 9, 2001

Serial No. 09/927,009

METHOD FOR FORMING A HOT MELT ADHESIVE

Ronald D. Bakule  
Agent for Appellant

J.L. Goff II  
Examiner

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**BRIEF FOR APPELLANTS**

This is an appeal from the final rejection by the Examiner of November 4, 2003 rejecting claims 1-4. Appellants filed a Notice of Appeal pursuant to 37 C.F.R. 1.191 on February 4, 2004.

An authorization to charge payment of the fee for the filing of the Appeal Brief to Deposit Account 18-1850 is also enclosed.



#### REAL PARTY IN INTEREST [37 C.F.R. 1.192(c)(1)]

The real party in interest is Rohm and Haas Company, 100 Independence Mall West, Philadelphia, PA 19106-2399.

#### RELATED APPEALS AND INTERFERENCES [37 C.F.R. 1.192(c)(2)]

There are no other related appeals or interferences that will directly affect or be directly affected or have a bearing on the Board's decision in the pending appeal.

#### STATUS OF CLAIMS [37 C.F.R. 1.192(c)(3)]

The status of the claims is as follows:

Allowed claims	-	none
Claims objected to	-	none
Claims cancelled	-	none
Claims pending	-	1·4
Claims rejected	-	1·4
Claims on appeal	-	1·4

#### STATUS OF AMENDMENTS [37 C.F.R. 1.192(c)(4)]

The rejected claims are set out in Appendix 1.

#### SUMMARY OF INVENTION [37 C.F.R. 1.192(c)(5)]

Appellant claims (claims 1·2)

a method for forming a moisture reactive hot melt adhesive including:

forming a hydroxyl-functional prepolymer by reacting first components including a polyol selected from the group consisting of polyether polyols, polyester polyols, and mixtures thereof, the polyol having a weight average molecular weight of from 250 to 5,000; and  
a polyisocyanate, the ratio of OH/NCO groups of the first components on an equivalents basis being from 1.05 to 3.0;

admixing second components including  
the hydroxyl-functional prepolymer,  
a crystalline polyester polyol, and  
a polyisocyanate, the weight ratio of the hydroxyl-functional prepolymer to the  
polyol being from 9/1 to 1/9, and the ratio of NCO/OH groups of the second  
components on an equivalents basis being from 1.5 to 2.2; and  
reacting, or allowing to react, the admixture.

Appellant also claims (claim 3) a moisture reactive hot melt adhesive formed by the method of claim 1 or claim 2 and (claim 4) a method for bonding substrates including the step of: forming a moisture reactive hot melt adhesive by the method of claim 1 or claim 2.

#### ISSUES [37 C.F.R. 1.192(c)(6)]

The issue is whether the appellant's invention of claims 1-3 is anticipated under 35 USC 102(e) by or, in the alternative, is obvious under 35 USC 103(a) over US Patent No. 6,365,700 to Graham ("Graham"). And the issue is whether claim 4 is unpatentable under 35 USC 103(a) over Graham as applied above, and further in view of US Patent No. 5,939,499 to Anderson, et al. ("Anderson").

#### THE REJECTIONS

Claims 1-3 stand finally rejected under 35 USC 102(e) as being anticipated by Graham. Claims 1-3 stand finally rejected under 35 USC 103(a) as being unpatentable over Graham. Claim 4 stands finally rejected under 35 USC 103(a) as being unpatentable over Graham as applied above, and further in view of Anderson.

## References Relied Upon by the Examiner

Graham discloses a high green strength reactive hot melt adhesive by prepolymerization of a certain polyester and a di- or poly isocyanate to form a hydroxy terminated prepolymer that is reacted with additional di- or polyisocyanate or optional polyols to produce a reactive hot melt adhesive.

Anderson is directed to a method for applying different hot melt adhesives.

## The Examiner's Arguments

The Examiner asserts that claims 1-3 are anticipated by Graham 35 USC 102(e) because Graham discloses a hot melt adhesive having process features in common with appellants and numerical limitations which generally overlap with those of appellants. The examiner asserts that claims 1-3 are unpatentable over Graham under 35 USC 103(a) because the numerical limitations of Graham could be varied by an ordinary artisan to provide appellant's invention.. And the examiner asserts that claim 4 is unpatentable over Graham as applied above, and further in view of Anderson under 35 USC 103(a) because of the arguments regarding Graham and the method of application of the different moisture reactive hot melt adhesive of Anderson.

## GROUPING OF CLAIMS [37 C.F.R. 1.192(c)(7)]

As to the rejections applied against claims 1-4 under 35 USC 102(e) and 35 USC 103(a), it is appellants' intention for each ground of rejection that the rejected claims stand or fall together.

## ARGUMENTS [37 C.F.R. 1.192(c)(8)]

### 35 USC 102(e) REJECTION OF CLAIMS 1-3

The examiner rejected claims 1-3 under 35 USC 102(e) as being anticipated by Graham. The examiner points to certain common elements in

Graham but concedes that Graham does not disclose admixing second components including the hydroxyl-functional prepolymer, a crystalline polyester polyol, and a polyisocyanate, the weight ratio of the hydroxyl-functional prepolymer to the polyol being from 9/1 to 1/9. Further, claim 1 (and claims 2-3 which depend therefrom) recites the polyol of the first components as having a weight average molecular weight of from 250 to 5,000. Appellant submits that Graham's disclosure does not provide appellant's invention of claims 1-3 with a sufficient degree of specificity to constitute anticipation under 35 USC 102(e).

Further, the examiner points to Example 2 of Graham as illustrative of an anticipating weight ratio of hydroxyl-functional polymer to polyol; appellant respectfully points out, however, that the polyol used in the first step of Graham's Example 2, DYNACOLL 7361, is indicated (Graham, column 2, lines 19-21) to have a molecular weight of 7000. Appellant's claims 1-3 recite the polyol of their first components as having a weight average molecular weight of from 250 to 5,000. Appellant submits that Graham's Example 2, therefore, is not an anticipating disclosure nor does the examiner point any other specific disclosure of appellant's molecular weight range or its beneficial combination with appellant's weight ratio of hydroxyl-functional polymer to polyol.

Appellant respectfully submits that each and every limitation of his invention of claims 1-3 is not disclosed with sufficient specificity by Graham.

### 35 USC 103(a) REJECTION OF CLAIMS 1-3

The examiner rejected claims 1-3 under 35 USC 103(a) as being obvious over Graham. Appellant traverses because the examiner has not meet his burden of providing a *prima facie* case of obviousness by pointing out any teaching or suggestion within Graham to modify Graham's method or composition to that of appellant. The examiner points to certain common elements in Graham but concedes that Graham does not disclose admixing

second components including the hydroxyl-functional prepolymer, a crystalline polyester polyol, and a polyisocyanate, the weight ratio of the hydroxyl-functional prepolymer to the polyol being from 9/1 to 1/9. Neither does Graham teach or suggest changing the ratio of prepolymer to second component polyol at all and particularly not to the range of ratios claimed by appellant.

Further, claims 1-3 recite the polyol of the first components as having a weight average molecular weight of from 250 to 5,000. Graham discloses molecular weights in the range of 2000 to 15,000 with the best commercially available polyester having a molecular weight of 7,200, but states that "if a lower molecular weight hydroxyl terminated polyester is used, i.e., one with a molecular weight of 3600 ... the viscosity of the resulting prepolymer is too high for efficient mixing..." (Graham, page 4, lines 19-22). Graham therefore points out the inapplicability of a first component polyol molecular weight of 3600 to Graham's own method and further fails to provide enablement of such a molecular weight in his process, thereby teaching away from the lower molecular weights claimed by appellant.

The examiner further suggests that Graham points toward optimum molecular weights including at least 3,601 to 5,000. There is no support for this supposition within Graham; the inapplicability of a molecular weight of 3,600 falls far short of suggesting that 3,601 would be efficacious – there is no such suggestion within Graham and Graham's comment that the polyester molecular weight can be too high falls far short of suggesting 5,000 as a possible upper limit, particularly since Graham indicates, as above, that a polyester of molecular weight 7,200 is the best commercially available polyol, and that a molecular weight of 15,000 "will work as well". Appellant respectfully submits that the examiner is relying on appellant's own disclosure and thereby reading absent numerical limitations into Graham.

Appellant respectfully submits that Graham provides no teaching, suggestion, or motivation to appellant's method or composition as claimed.

### 35 USC 103(a) REJECTION OF CLAIM 4

The examiner rejected claim 4 under 35 USC 103(a) as being unpatentable over Graham as applied above, and further in view of Anderson. The examiner argues that Graham teaches all of the limitations of claim 4 except for a teaching of a method for applying a moisture reactive hot melt adhesive. Appellant traverses, *inter alia*, because the examiner has himself conceded in his rejections of claims 1-3, that Graham does not disclose each and every limitation of claim 1, and claim 2 which is dependent therefrom, which read into claim 4. Further, claims 1-2 and, as argued herein, are not taught or suggested by Graham. Therefore the teachings of Graham cannot be perfected by Anderson which is directed to a method for applying different hot melt adhesives but does not teach or suggest appellants' compositional limitations.

### Conclusions

Appellants respectfully submit that the present invention as defined by claims 1-3 is not anticipated by Graham under 35 U.S.C. 102(e) because Graham does not disclose each and every limitation of claims 1-3. Appellants respectfully submit that the present invention as defined by claims 1-3 is not unpatentable over Graham under 35 U.S.C. 103(a) because the examiner has not met his burden of establishing a *prima facie* case of obviousness, there being no teaching, suggestion, or motivation within Graham to appellants' invention. Appellants further respectfully submit that the method of the present invention as defined by claim 4 is not unpatentable over Graham as applied above, and further in view of Anderson under 35 U.S.C. 103(a) because Anderson's disclosure does not perfect the shortcomings of Graham, as above.

Appellant respectfully requests the Board to reverse the Examiner's rejections and enter a Notice of Allowance. The Commissioner is hereby authorized to charge any additional fee which may be required, or to credit any overpayments to Deposit Account 18-1850.

Respectfully submitted,



RONALD D. BAKULE

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Rohm and Haas Company  
Independence Mall West  
Philadelphia, PA 19105  
DATE: April 2, 2004

APPENDIX [37 C.F.R. 1.192(c)(9)]

CLAIMS 1-4

1. A method for forming a moisture reactive hot melt adhesive comprising
  - a) forming a hydroxyl-functional prepolymer by reacting first components comprising a polyol selected from the group consisting of polyether polyols, polyester polyols, and mixtures thereof, said polyol having a weight average molecular weight of from 250 to 5,000; and a polyisocyanate, the ratio of OH/NCO groups of said first components on an equivalents basis being from 1.05 to 3.0;
  - b) admixing second components comprising said hydroxyl-functional prepolymer, a polyol selected from the group consisting of polyether polyols, polyester polyols, and mixtures thereof, and a polyisocyanate, the weight ratio of said hydroxyl-functional prepolymer to said polyol being from 9/1 to 1/9, and the ratio of NCO/OH groups of said second components on an equivalents basis being from 1.5 to 2.2; and
  - c) reacting, or allowing to react, said admixture.
2. The method of claim 1 wherein said second components comprise said hydroxyl-functional prepolymer, a crystalline polyester polyol, and a polyisocyanate, the weight ratio of said hydroxyl-functional prepolymer to said polyol being from 9/1 to 1/9, and the ratio of NCO/OH groups of said second components on an equivalents basis being from 1.5 to 2.2.
3. A moisture reactive hot melt adhesive formed by the method of claim 1 or claim 2.
4. A method for bonding substrates comprising

forming a moisture reactive hot melt adhesive by the method of claim 1 or claim 2;

heating said hot melt adhesive to a temperature of 90 °C to 140 °C ;

applying said heated hot melt adhesive to a first substrate in the presence of moisture;

contacting said applied heated hot melt adhesive with a second substrate; and

cooling, or allowing to cool, said adhesive.